STAT 450 SYLLABUS
Fall 2014

STAT 450 Practicum in Statistical Modeling is the senior design course for undergraduate students in statistics. Statistics students in their senior year (or junior with adequate preparation) may take STAT 450 either the fall or spring semester. The course will consist of individuals or teams working on different projects under the guidance of a mentor/supervisor and will require both a written paper and a poster presentation.

Teams: Each student may work individually or as a member of a team. However, no more than two STAT 450 students may be members of the same team. Teams may be "housed" outside the statistics department as long as the project has sufficient statistical content. For example, you might be part of a mechanical engineering team that has a need for statistical analysis of a data set.

Projects: The only requirement of the project is that it deals with statistics and/or probability. Most students/teams will opt to analyze a data set as their project, but there are other possibilities: a simulation study; developing an R package; a theoretical investigation; developing new visualization methods; writing a publishable review paper on some area of statistics; investigating a new teaching method for introductory statistics (e.g., using modern media and/or internet resources). If analyzing a data set, there must be one or two substantive questions that are addressed by the analysis. A subject-matter mentor can suggest relevant questions. It is important to bear in mind that *the project should reflect your overall statistical training and something much more mature than an end-of-semester course project.*

Mentoring: Each team must have a designated *statistical* mentor. The statistical mentor may be from outside the statistics department if he/she is able to provide suitable statistical guidance. An advanced graduate student (beyond qualifying exams and working on a dissertation) may serve as a statistics mentor with approval from the course instructor after an interview. Although not required, you are strongly encouraged to also have a subject matter mentor if the statistics mentor does not have expertise in the given area of application.

Teams must meet with their statistical mentor at least four times throughout the semester according to the following timeline. All students will give an update of their mentor meetings at the Wednesday class meetings given below.

- At the start of the semester to develop a project by Wednesday, September 17
- Once by Wednesday, October 15
  Once by Wednesday, November 19

- At the end of the semester to finalize your report and poster by Friday, November 28.

Class Meetings: Beginning Wednesday, September 3, the class will meet weekly with the course instructor to review progress on their projects. Each meeting a few teams will be assigned to give a more formal report of their work.

Requirements: Students are expected to participate in a presentation of their work. This may be a poster or oral presentation depending on suitable outlets in the given semester. For the Fall 2014 term teams will present their work at the following poster presentation event. Please mark this date in your calendars. Students will also submit a written report of the project. Details about the written report can be found on the OwlSpace website for STAT 450.

- December 4, 3:00-4:00pm, Department of Statistics Poster Presentation

- December 12, 5pm: Final written report due

Grade: Your final grade will be based on class participation, meetings with your your mentor, poster and report.

10% Class participation
10% Mentor in-person meetings; check the box four times
40% Poster
40% Report

A panel of statistics faculty will grade the reports and poster presentations. Project mentors will not grade their own teams, but they should provide advice and/or guidance on the poster and report. In the case of teams with two STAT 450 students, assessment of individual contributions will be required by the team, as well as by the grading panel. It is possible for different team members to receive different final grades if the effort is deemed unequal.